DOCUMENT RESUME

ED 241 091 JC 840 113

AUTHOR Gash, Philip
TITLE Remedial Math and Language Arts Study: Effectiveness of Remedial Classes in a Rural Northern California Community College District.
INSTITUTION Shasta-Tehama-Trinity Joint Community Coll. District, Redding, CA. Instructional Research Office.
PUB DATE Sep 83
NOTE 14p.
PUB TYPE Reports - Research/Technical (143) -- Statistical Data (110)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; *Academic Persistence; Community Colleges; *Grade Point Average; Majors (Students); *Program Effectiveness; Program Evaluation; *Remedial Instruction; Remedial Mathematics; Remedial Reading; Two Year Colleges; *Two Year College Students

ABSTRACT

A study was undertaken to assess the effectiveness of remedial mathematics and language arts classes in a rural northern California community college district. Data related to remedial class completion, following semester return rates, units completed, grade point average (GPA), and declared major were collected for all remedial students taking language arts or mathematics courses in fall 1981, spring 1982, and fall 1982. Study results, based on an overview of the three terms, included the following: (1) in general, during fall terms, 65%-75% of the students completed a remedial class with an A to D grade, and 60%-65% returned for classes the following spring; (2) in the spring, about 60% of the students completed a remedial class and only 45% returned in the fall; (3) the students who completed a remedial class, returned to earn an average of 11.8 units with a GPA of 2.81 and when they returned the following semester they completed an average of 10 units with a 2.84 GPA; (4) students who did not complete the remedial class but did return to the college earned an average of 7.1 units with a GPA of 2.26; and (5) retention for remedial class completers was slightly less than for the student population as a whole. (LAL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED241091

REMEDIAL MATH AND LANGUAGE ARTS STUDY:

Effectiveness of Remedial Classes in a Rural Northern California Community College District

Prepared By

Philip Gash, Ph.D., Research Officer

Instructional Research Office

Shasta-Tehama-Trinity
Joint Community College District

SEPTEMBER 1983

JC 840 113

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

P. Gash

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☒ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

REMEDIAL MATH AND LANGUAGE ARTS STUDY

Abstract

This paper is in the form of a memorandum to The Learning Assessment and Retention Consortium (LARC), a group of California Community Colleges. The study was undertaken to determine the effectiveness of remedial classes in a rural Northern California Community College District. Several parameters are used as broad measures of effectiveness: (a) remedial class completion rates, (b) following semester return rate, (c) units attempted, (d) GPA, and (e) admission form declared major. The report discusses methodology of data collection, definition of terms, computations, and summary results.

September 21, 1983

TO: LARC Committee

FROM: Philip Gash, Institution Research Office

RE: Remedial Math and Language Arts Student Data Fall '81 to Fall '82

I. OVERVIEW

At the request of the Committee a study was undertaken to determine the effectiveness of remedial classes. Several parameters were used as broad measures of effectiveness: (a) remedial class completion rates, (b) following semester return rate, (c) units completed, (d) GPA, and (e) admission form majors. These data elements were collected for all remedial students taking Language Arts or Math classes for the three semesters, Fall '81, Spring '82, and Fall '82. These broad measures of effectiveness can be used to answer two questions most often associated with remedial programs: (1) Does the student who completes a remedial class perform better than the average student? and (2) Is the student's following semester retention any better than the average?

In both cases, we conclude the answer in general is no. The overall GPA data indicates the remedial student completer performs no better than the average student and his following semester retention is no better than the average student. These results indicate that the remedial program is accomplishing its goals: students entering with below level skills are raised to entry level.

A secondary result of the study is that about 12% of the remedial students do not complete the remedial class, but return the following semester and complete more units and obtain a higher GPA. We speculate these students are ones for whom the remedial skill tests are ineffective or only marginally valid.

The remainder of the report discusses the definition of terms, the summary results, the conclusion, and an appendix of the results by semester for the remedial Math and Language Arts categories.

II. DEFINITION OF TERMS

For the purpose of this study remedial math classes are Basic Algebra, Intermediate Algebra, Plane Trigonometry, General Math, Agri Math, and Business Math. The remedial language arts classes are Vocational Technical Writing, Essentials of Reading, Essentials of Writing and Grammar, Reading Laboratory, Spelling, Sentence Structure, and Paragraph Writing. The aforementioned data elements, completion rates, GPA, etc. were tabulated

for each class for each semester; however, to keep the statistical data within manageable bounds and to keep it meaningful, the data discussed below is separated into two broad categories: Remedial Math and Remedial Language Arts.

In the following tables these definitions are used: "student" refers to one person, enrolled for one or more remedial classes in either category during one semester at the attendance accounting date. Students dropping a remedial class before that date are excluded from this study. In the math classes, one student equals one enrollment because the classes are a full semester. In language arts that is not the case, one student is often equal to one or more enrollments because some of the classes are short term, six weeks.

Completers are students who receive an A-D grade, non-completers do not receive an A-D grade, most often they receive either an F or W.

A returning student is one who registers for classes the semester following his enrollment in a remedial class. The non-returning student does not register for any classes the following semester.

The student major was taken from the student admission form. In the past, it has not proved to be an accurate measure of the student's major, in large part due to the fact students change majors without notifying anyone. We refer to the student's major as the admission-form-major. Keeping in mind the loose accuracy of the admission-form-major only three categories are recognized: transfer, undeclared, and vocational. All students majoring in either a Vocational AA Program, a Certificate Program or an Apprenticeship are categorized as a Vocational Major.

Four main types of data were tabulated for each remedial category each semester. They are admission-form-major, units completed and GPA while taking the remedial class, units completed and GPA the following semester, and number of students enrolled and the number returning.

The students were partitioned into four groups: those who complete the remedial class and return, those who complete and do not return, those who do not complete and return, and those who do not complete and do not return.

III. SUMMARY OF RESULTS

For the purpose of a general discussion about remedial students the data elements for both math and language arts remedial categories have been averaged over three semesters and they are presented below. Comparable tables are presented in the Appendix for the remedial math and language arts category for Fall '81, Spring '82, and Fall '82.

MATH & LANGUAGE ARTS REMEDIAL CLASSES
FALL 81 - SPRING 81 - FALL 82

1. Average Student Percentages

	Return	Not Return	Totals
Completers (A-D)	52%	16%	68%
Non Completers (F-W)	12%	20%	32%
Totals	64%	36%	100%

2. Average Units Completed and Average GPA

	Return	Not Return
Completers	11.8 (2.81)	9.3 (2.67)
Non Completers	7.1 (2.26)	2.1 (1.00)

3. Average Units Completed and Average GPA the Following Semester

	Return
Completers	10 (2.84)
Non Completers	8.6 (2.58)

Approximately 1,050 students take remedial math classes and about 375 take remedial language arts classes in the Fall, in the Spring the figures are about 850 and 320 respectively.

III. DISCUSSION

Generally in the Fall, 65%-75% of the students complete a remedial class with a grade A-D, and 60%-65% of the students return for classes the following Spring. In the Spring, about 60% of the students complete a remedial class and only 45% return in the Fall.

Upon further breakdown for the Fall, an average of 52% complete a remedial class and return, 16% complete but don't return, 12% don't complete and return, and 20% don't complete and don't return the following

Spring. In the Spring remedial classes, about 35% complete and return, 25% complete and don't return, and 30% don't complete and don't return.

The students who complete a remedial class and return complete an average of 11.8 units with a 2.81 GPA; when they return the following semester they complete an average of 10 units with a 2.84 GPA. Students who do not complete but who do return complete an average of 7.1 units with a 2.26 GPA; upon returning they complete 8.6 units with a 2.58 GPA.

It is quite surprising to find that about 12% of the students who do not complete a remedial class do return and complete more units 8.6 compared to 7.1 and obtain a higher GPA, 2.58 compared to 2.26. Some speculation is made about these students in the conclusion section.

The students who complete a remedial class but do not return complete on the average 9.3 units with a 2.67 GPA; those who do not complete and do not return complete 2.1 units with 1.00 GPA.

A breakdown of admission-form-majors for the two remedial class categories yields about 1/3, 1/3, and 1/3 ratio for transfer, undeclared, and vocational for math students; and 1/5, 2/5, and 2/5 ratio respectively for language arts students.

IV. CONCLUSION

The basic question which the data can address for the student who completes a remedial class is, "Is his retention and performance better than the average?" The answer is no.

The probation study conducted last year showed a Fall to Spring retention of day and day-evening students of 66%, which is marginally more than the 64% average shown here for remedial students. The Spring to Fall retention rate for day and day-evening students is 50%, which is higher than the 47% and 41% for remedial students. We conclude that retention for remedial class completers is slightly less than for the comparable student population.

The GPA for day and day-evening student taking 6 or more units is very close to 3.00 for both Fall '82 and Spring '83. The average GPA for the remedial class completer-returner is 2.81 which indicates he is performing about "average".

The average GPA for the remedial class non completer-returner is 2.58, indicating he is performing below the average, but certainly well enough to complete his educational goals and objectives. One conjecture to explain the non completer-returner phenomena is that he is a student whose elementary math and English skills were inadequately assessed: he would be the student who did well in the subject in high school, hasn't practiced the skills, performs poorly on the remedial tests, enrolls

for fewer units, takes the class, it quickly "all comes back" to him, he gets bored with the class and does not complete it. Once he is back in the academic environment, his skills improve with a semester's practice and he takes more units and performs better the following semester.

APPENDIX

REMEDIAL MATH

A) FALL '81

A1) Students

	Return (S82)	Not Return	Totals
Completers (A-D)	523 (49%)	134 (13%)	657 (67%)
Non Completers (F-W)	146 (14%)	256 (24%)	402 (38%)
Totals	669 (63%)	390 (37%)	1,059 (100%)

A2) Units Completed and GPA Fall '81

	Return	Not Return
Completers	11.8 (2.89)	8.4 (2.82)
Non Completers	6.3 (2.29)	1.8 (.91)

A3) Units Completed and GPA Spring '82 for Returning Students

	Return (S82)
Completers	11.0 (2.88)
Non Completers	9.0 (2.59)

A4) Admission Form Majors

Transfer	33%
Undeclared	32%
Vocational	35%

REMEDIAL MATH

B) SPRING '82

B1) Students

	Return (F82)	Not Return	Totals
Completers (A-D)	299 (34%)	199 (23%)	498 (57%)
Non Completers (F-W)	115 (13%)	259 (30%)	374 (43%)
Totals	414 (47%)	458 (53%)	872 (100%)

B2) Units Completed and GPA Spring '82

	Return	Not Return
Completers	11.6 (3.04)	10.5 (2.93)
Non Completers	6.6 (2.13)	3.4 (1.31)

B3) Units Completed and GPA Fall '82

	Return (F82)
Completers	10.5 (3.00)
Non Completers	9.0 (2.60)

B4) Admission Form Majors

Transfer	33%
Undeclared	33%
Vocational	34%

REMEDIAL MATH

C) FALL '82

C1) Students

	Return (S83)	Not Return	Totals
Completers (A-D)	475 (47%)	176 (17%)	651 (64%)
Non Completers (F-W)	149 (15%)	219 (21%)	368 (36%)
Totals	624 (62%)	395 (38%)	1,019 (100%)

C2) Units Completed and GPA Fall '82

	Return	Not Return
Completers	11.8 (2.89)	8.7 (2.76)
Non Completers	7.5 (2.32)	1.9 (.88)

C3) Units Completed and GPA Spring '83

	Return (S83)
Completers	7.9 (2.84)
Non Completers	7.0 (2.56)

C4) Admission Form Majors

Transfer	34%
Undeclared	30%
Vocational	36%

REMEDIAL LANGUAGE ARTS

D) FALL '81

D1) Students

	Return (S82)	Not Return	Totals
Completers (A-D)	210 (59%)	62 (18%)	272 (76%)
Non Completers (F-W)	25 (7%)	57 (16%)	82 (24%)
Totals	235 (63%)	119 (34%)	354 (100%)

D2) Units Completed and GPA Fall '81

	Return	Not Return
Completers	12.2 (2.79)	8.8 (2.51)
Non Completers	6.3 (2.04)	1.8 (.91)

D3) Units Completed and GPA Spring '82

	Return (S82)
Completers	11.3 (2.77)
Non Completers	9.2 (2.27)

D4) Admission Form Majors

Transfer	25%
Undeclared	38%
Vocation	37%

REMEDIAL LANGUAGE ARTS

E) SPRING '82

E1) Students

	Return (F82)	Not Return	Totals
Completers (A-D)	111 (35%)	92 (29%)	203 (64%)
Non Completers (F-W)	19 (6%)	96 (30%)	115 (36%)
Totals	130 (41%)	188 (59%)	318 (100%)

E2) Units Completed and GPA Spring '82

	Return	Not Return
Completers	11.3 (2.68)	10.3 (2.57)
Non Completers	8.7 (2.79)	2.3 (1.17)

E3) Units Completed and GPA Fall '82

	Return (F82)
Completers	10.7 (2.72)
Non Completers	9.7 (2.81)

E4) Admission Form Majors

Transfer	19%
Undeclared	41%
Vocational	36%

REMEDIAL LANGUAGE ARTS

F) FALL '82

F1) Students

	Return (S83)	Not Return	Totals
Completers (A-D)	244 (55%)	76 (17%)	320 (73%)
Non Completers (F-W)	38 (9%)	83 (19%)	121 (27%)
Totals	282 (64%)	159 (36%)	441 (100%)

F2) Units Completed and GPA Fall '82

	Return	Not Return
Completers	11.8 (2.75)	8.8 (2.37)
Non Completers	7.0 (2.00)	1.5 (1.09)

F3) Units Completed and GPA Spring '83

	Return (S83)
Completers	7.9 (2.84)
Non Completers	7.8 (2.69)

F4) Admission Form Majors

Transfer	28%
Undeclared	33%
Vocational	42%

ERIC® CLEARINGHOUSE FOR
JUNIOR COLLEGES
UNIVERSITY OF CALIFORNIA

APR 13 1984

8118 Math-Sciences Building
Los Angeles, California 90024